

The GO Program

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Reason for Investing in the GO Program

Peer-Review and Competed Guest Observer Program

Establishes broad community engagement

Tackles diverse set of astrophysical questions in changing paradigms

Maximizes synergies with JWST, Euclid, LSST, and other future telescopes

Open competition inspires creativity

Ensures long-term scientific discovery potential

25% of AFTA is a Guest Observer Program
(2.5x Larger than IDRM)

Community Engagement To Date

Meetings Focused on a WFIRST-like Telescope

- 1.) Very Wide Field Surveys in Light of Astro 2010 (STScI, June 2011)
(<http://www.stsci.edu/institute/conference/verywidefield>)
- 2.) Science with a Wide-Field Infrared Telescope in Space (Pasadena, Feb 2012)
(<http://www.ipac.caltech.edu/wfir2012/>)
- 3.) Wide Field Infrared Space Telescope Meeting-in-a-Meeting (Anchorage, Jun 2012)
(<http://aas.org/meetings/aas220/mim/wfirst>)
- 4.) New Telescope Meeting (Princeton, Sep 2012)
(<http://www.princeton.edu/astro/news-events/public-events/new-telescope-meeting/>)
- 5.) WFIRST Mission and NRO Telescope Splinter Meeting (Long Beach, Jan 2013)
- 6.) WFIRST Meeting (National Harbor, Jan 2014)
- 7.) Wide Field IR Surveys: Science and Techniques (Pasadena, Nov 2014)

Community Engagement To Date

AFTA-Related SDT Reports and Related Documents

- 1.) Dressler et al. (2012, arXiv1210.7809) – Exploring NRO Opportunity for a Hubble-sized Wide-Field Space Telescope
- 2.) Spergel et al. (2013, arXiv1305.5422) – WFIRST-AFTA Final Report
- 3.) Spergel et al. (2013, arXiv1305.5425) – WFIRST-2.4: What Every Astronomer Should Know

Getting GOs Directly Involved



50 White Papers in the AFTA-WFIRST SDT Report



Ideas for Future Initiatives

1.) LSST + WFIRST synergies section in the April report

- Experiment with JWST synergies was successful
- LSST community is very large, and diverse
- Highlights science from **two** top Decadal priorities

2.) Build science roadmaps to tackle compelling questions

- Lots of overlap in key science drivers, large communities
- Bring together at dedicated workshops (e.g., IAU focus meetings)

3.) Kick off pure WFIRST science sessions at each AAS meeting

- Forces community members to think hard about their GO program
- Highlights diverse science potential from non-insiders
- Following presentations, ask for short white papers

4.) Better leveraging of SDT members

- >50 colloquia per year given by our science team
- Ask host institution for a meeting with students/postdocs about WFIRST

Ideas for Future Initiatives

5.) Mine the int. astronomy meeting list and infuse WFIRST representation

- SOC influences
- Dedicated talks and posters, or slides in existing presentations

6.) Make it clear how scientists can participate

- Key Projects: Management, funding, joining
Need an advertised, open process

7.) Start thinking about competitive theoretical/simulation funding programs

8.) Make the GO commitment specific and quantified

- Best science strategy for Key Projects in year (e.g., 3) may not be what we envision today
- Key Projects have to get done, but to get done “better” they should compete with other great science ideas

9.) Get a New Name

AFTA is a duck or a trade agreement,
not a *really cool telescope*

Extra – Charts for NRC

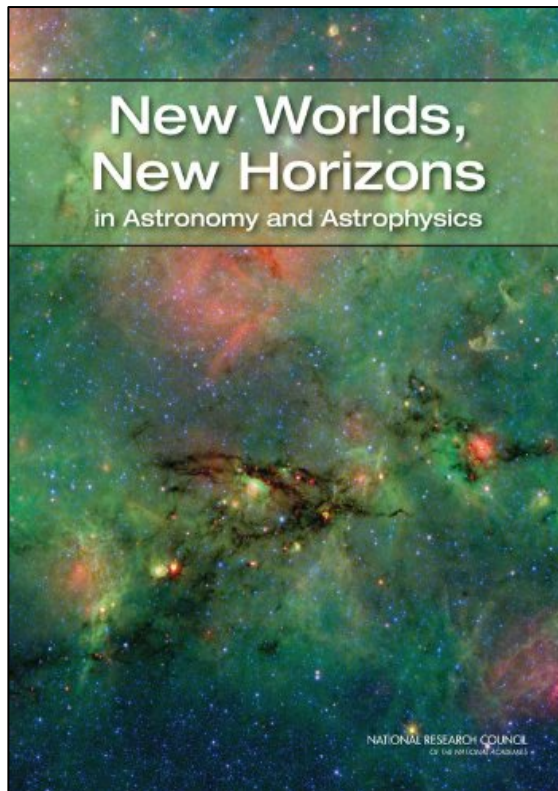
AFTA is a perfect match for *many* aspects of NWNH

Frequently discussed

#1 Large-Scale Priority - Dark Energy, Exoplanets

#1 Medium-Scale Priority - New Worlds Tech. Development
(prepare for 2020's planet imaging mission)

But, AFTA provides improvement over IDRM in many other areas....



5 Discovery Science Areas

ID & Characterize Nearby Habitable Exoplanets
Time-Domain Astronomy
Astrometry
Epoch of Reionization
Gravitational Wave Astrometry

20 Key Science Questions

Origins (7 key areas)
Understanding the Cosmic Order (10 key areas)
Frontiers of Knowledge (4 key areas)

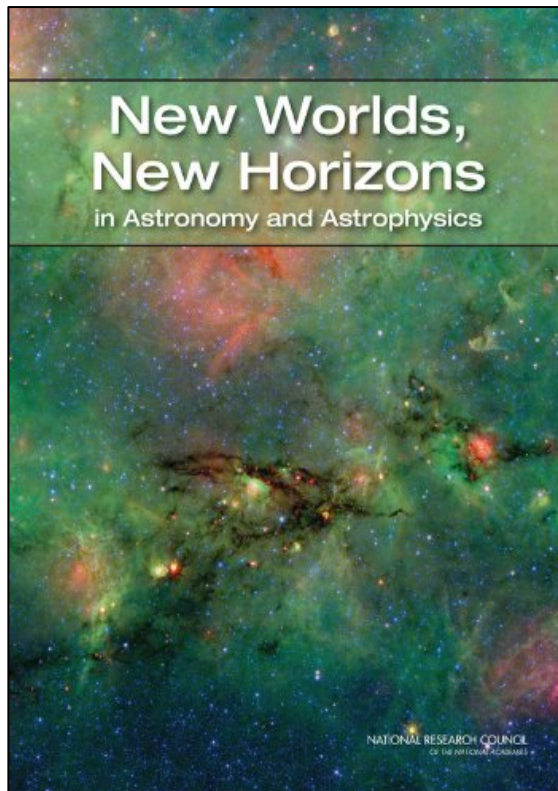
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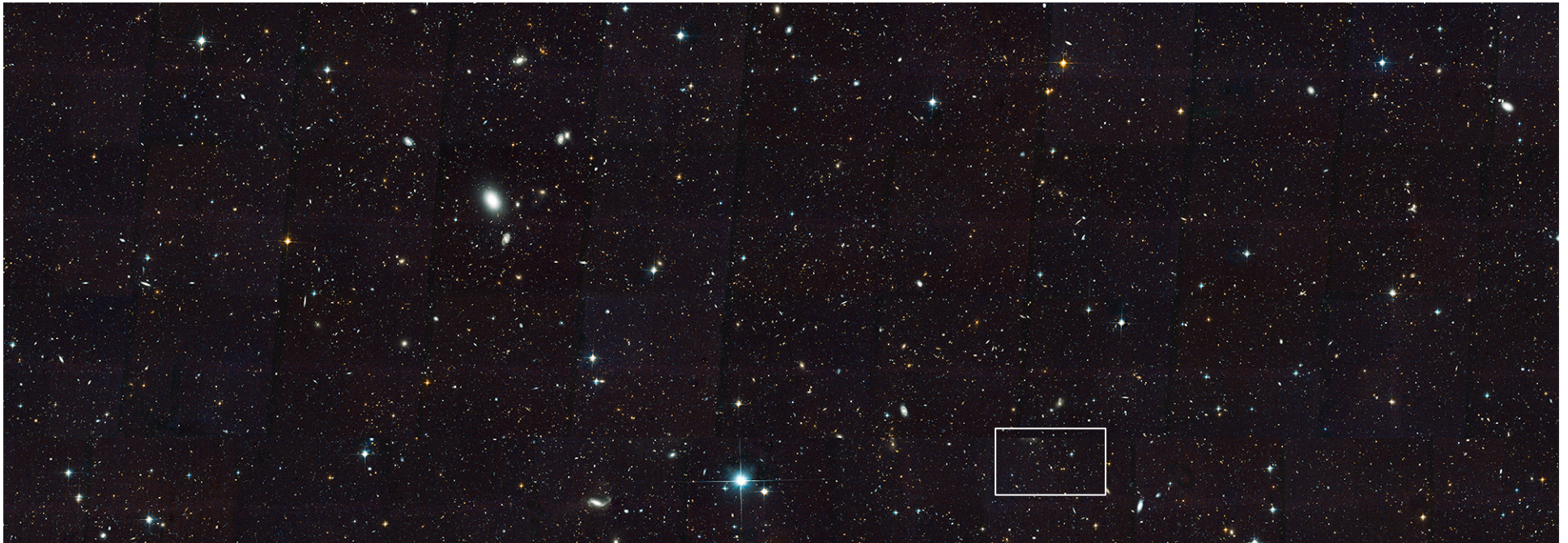
→ Origins (**7/7 key areas**)
Understanding the Cosmic Order (**6/10 key areas**)
Frontiers of Knowledge (**3/4 key areas**)

See Table in the AFTA SDT report (p 8 -10) for specific gains over IDRM

AFTA vs Hubble



Hubble Ultra Deep Field - IR
~5,000 galaxies in one image



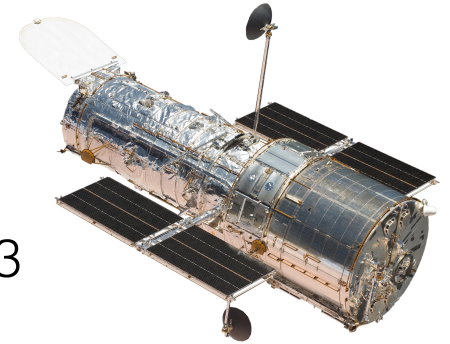
WFIRST2.4 Deep Field
>1,000,000 galaxies in each image

AFTA vs Hubble GO Program

Hubble

Hubble/WFC3-IR is 25% of all observations

Hubble/WFC3-IR data led to 2 publications per week in 2013



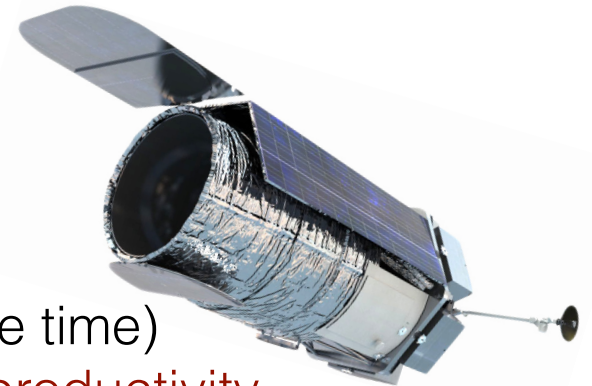
AFTA

AFTA is 200x faster than Hubble WFC3/IR

AFTA has higher resolution than Hubble WFC3/IR

AFTA has higher efficiency than Hubble (i.e., on-source time)

→ Assume a conservative factor of 5 gain in science productivity



Assuming a conservative factor of 5 gain in science productivity

→ AFTA could yield **~500 scientific papers per year** from its GO mode